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2 **REMARKS**

3 This is an amendment filed under 37 CFR 1.111 and  
4 responsive to the office action dated Jan 27, 2005. Claims  
5 38, 40-44, 47, 49-51, 53-55, 57, 59, 60, 63, 66, 68-70, 74,  
6 81, and 83 were allowed in the office action of Jan 27,  
7 2005.

8 With regard to the 35 USC 112 rejection of claims 39,  
9 56, and 71, applicant notes that azimuthal wavenumber index  
10  $p$  and radial wave number  $q$  are merely arbitrary variables  
11 assigned to mode indices known in the prior art of  
12 travelling wave modes, and fully defined in the  
13 specification paragraph starting on page 4 line 5. However,  
14 to exactly correspond to the specification recitation of the  
15 same formulas with  $m$  and  $n$  as indices on page 21 lines 10-16  
16 for asymmetric travelling waves, the claims have been  
17 amended to make reference to  $m$  and  $n$  rather than  $p$  and  $q$ .

18 With regard to the examiner statement that  $\arccos$  term does  
19 not relate to the physical structure of the power combiner,  
20 applicant notes the penultimate sentence found on page 21  
21 line 17-18, which notes that when the product formed on page  
22 21 line 13 (including the constituent multiplicative  $\cos^{-1}$   
23 term) is an integer, the final waveguide 88 can be a simple  
24 cylinder. The indices  $m$  and  $n$  reference the travelling wave

1 modes best supported by than the structure. Reconsideration  
2 is requested.

3 With regard to the 35 USC 112 rejection of claims 45,  
4 46, 61, 62, 76, and 77 for lack of antecedent basis for  
5 "said feed waveguide helical section angle", these dependant  
6 claims now rely on dependant claims 40, 40, 57, 57, 72, 72,  
7 respectively, which contain the limitation "feed waveguide  
8 helical section angle".

9 With regard to the 35 USC 112 rejection of claims 52,  
10 67, and 82 for lack of antecedent basis for "said input  
11 waveguide" and "said input power", applicant has amended  
12 these claims to make antecedent reference to "feed waveguide  
13 input port" and removed the reference to "said input power".

14 With regard to the 35 USC 112 rejection of claims 58,  
15 64, 73, 76, 77, and 79 for lack of antecedent basis for  
16 "said central axis", this term has been amended into claims  
17 55, 55, 70, 72, 72, and 70, respectively.

18 With regard to the 35 USC 112 rejection of claim 72 for  
19 lack of antecedant basis for the term "said radius" and  
20 "said feed waveguide axis", independant claim 70 properly  
21 referenced "each said feed waveguide...rolled into a  
22 cylinder with an axis". Nevertheless, claim 70 has been  
23 amended to explicit reference "feed waveguide axis" and  
24 "feed waveguide radius" in amended claims 70 and 72.

1 With regard to the 35 USC 112 rejection of claim 75 for  
2 lack of antecedent basis for the term "said feed waveguide  
3 radius", the previously referenced amendment of claim 70  
4 addresses this matter.

5 With regard to the 35 USC 112 rejection of claims 76  
6 and 77 for lack of antecedent basis of "said feed waveguide  
7 center axis", these claims have been amended to delete the  
8 word "center" and now depend on claim 72.

9 With regard to the 35 USC 112 rejection of claim 78 for  
10 lack of antecedent basis for "said feed waveguide helical  
11 launch port", this claim has been amended to reference the  
12 "launch end" found in independent claim 70.

13 With regard to the 35 USC 112 rejection of claim 84 for  
14 lack of antecedent basis for "said reflector waveguide", the  
15 claim has been amended to reference "said final waveguide".

16 Reconsideration is requested for the above claims.

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18 With this amendment, the present application is in  
19 condition for allowance.

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Respectfully Submitted,

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